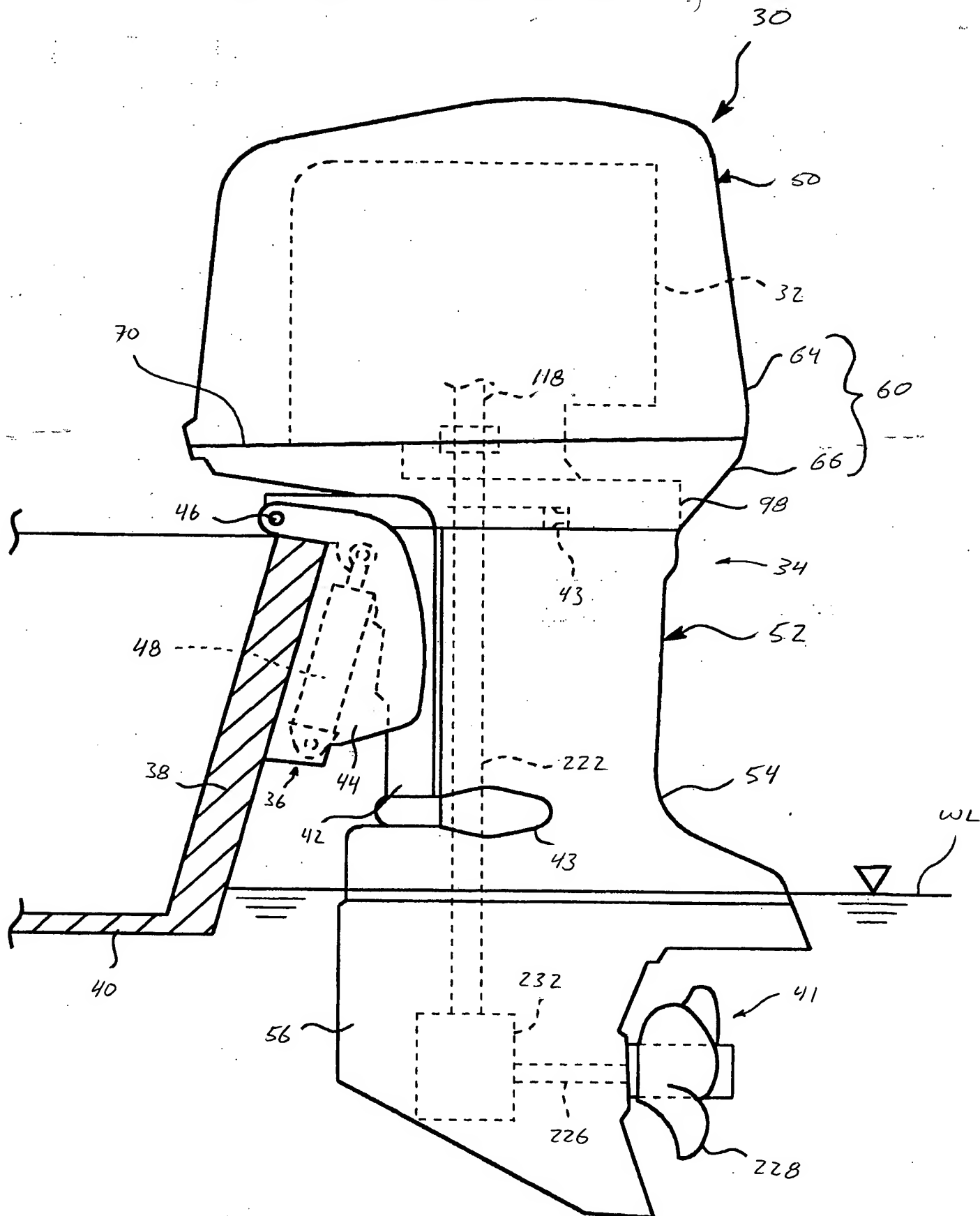


KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE  
ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown

Atty Docket: FS.20120US0A



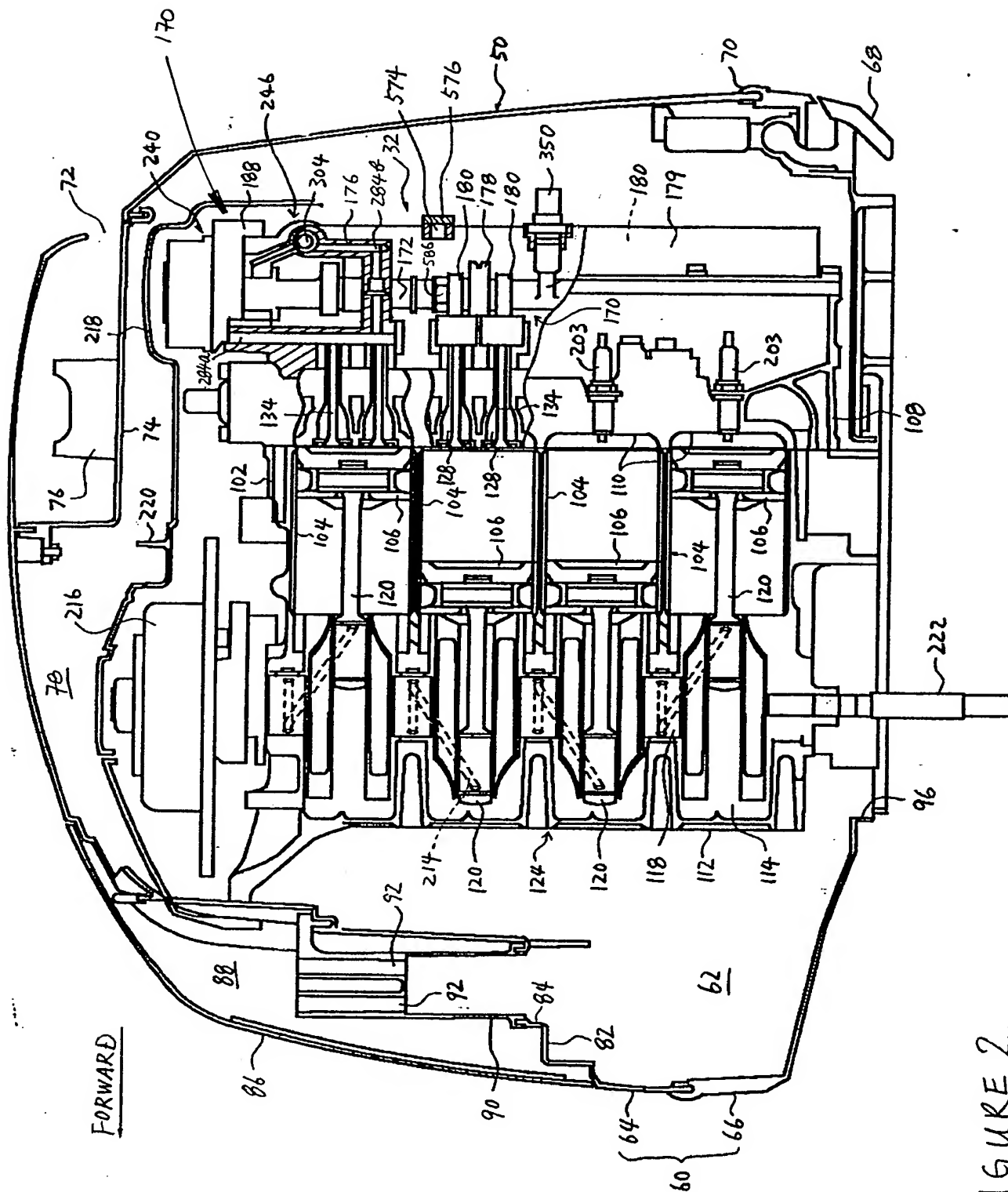


FIGURE 2

KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE  
ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown

Atty Docket: FS.20120US0A

KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE  
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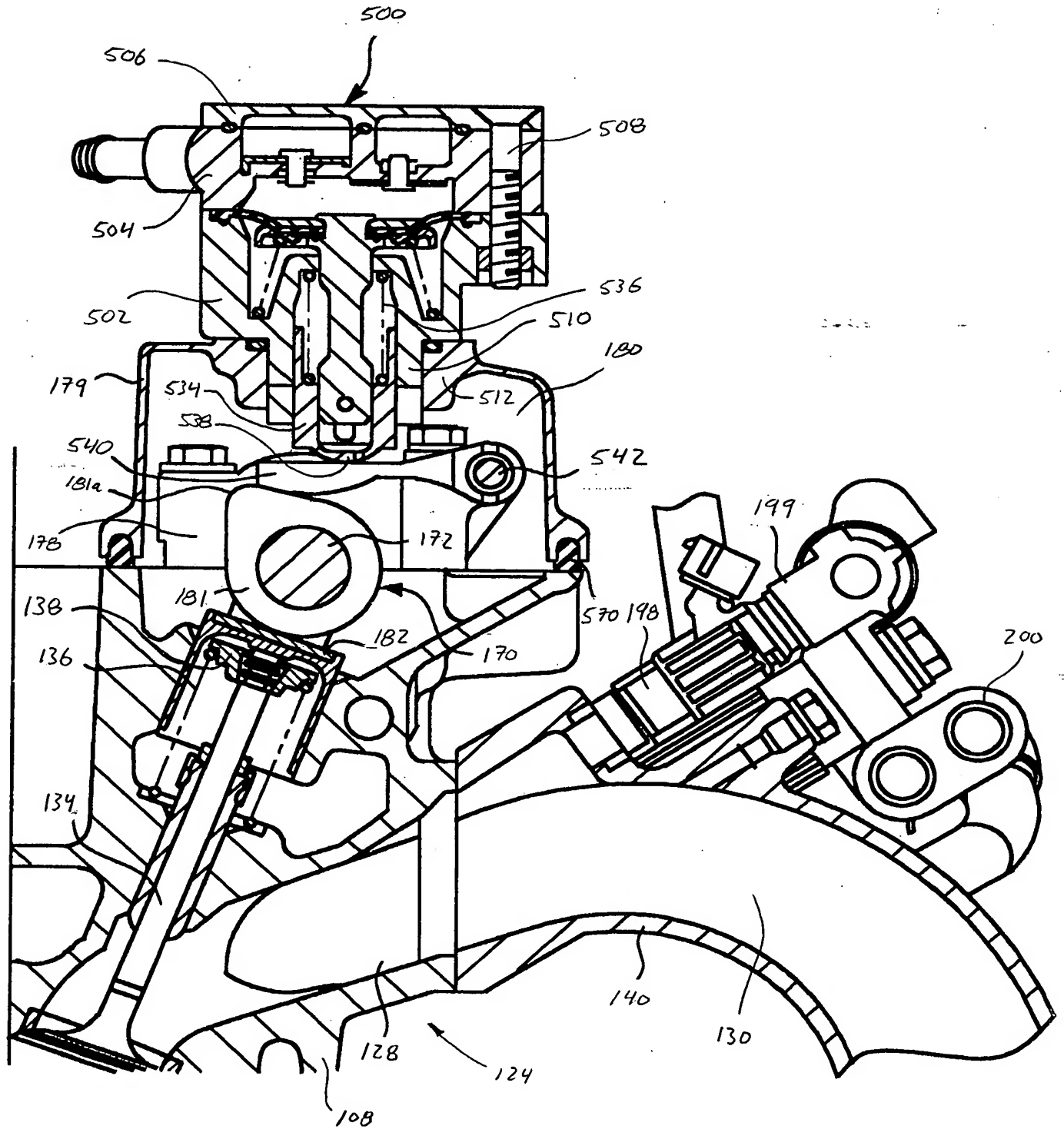


FIGURE 3

KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE  
ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown Atty Docket: FS.20120US0A

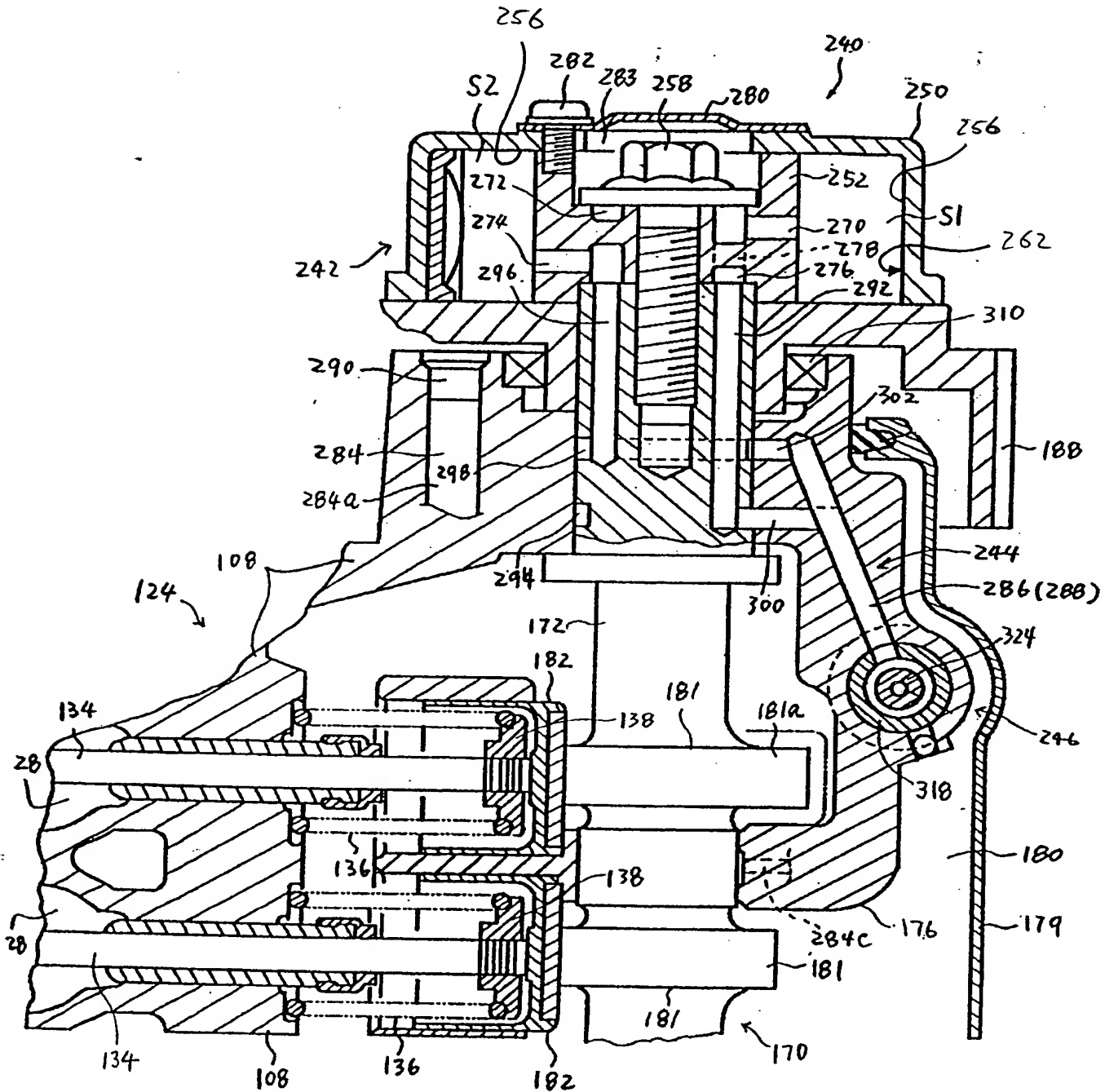


FIGURE 4

# KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown Atty Docket: FS.20120US04

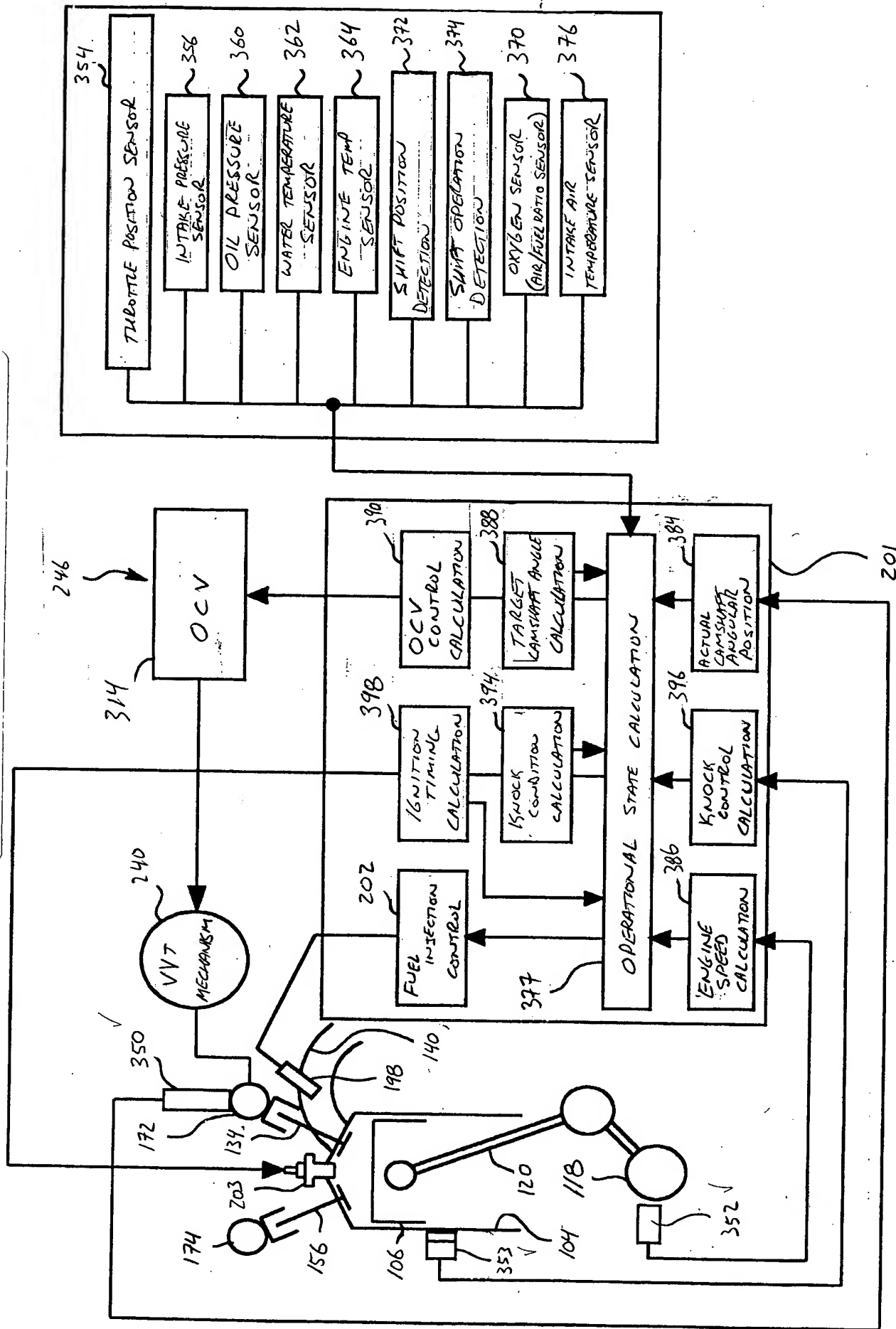


FIGURE 5

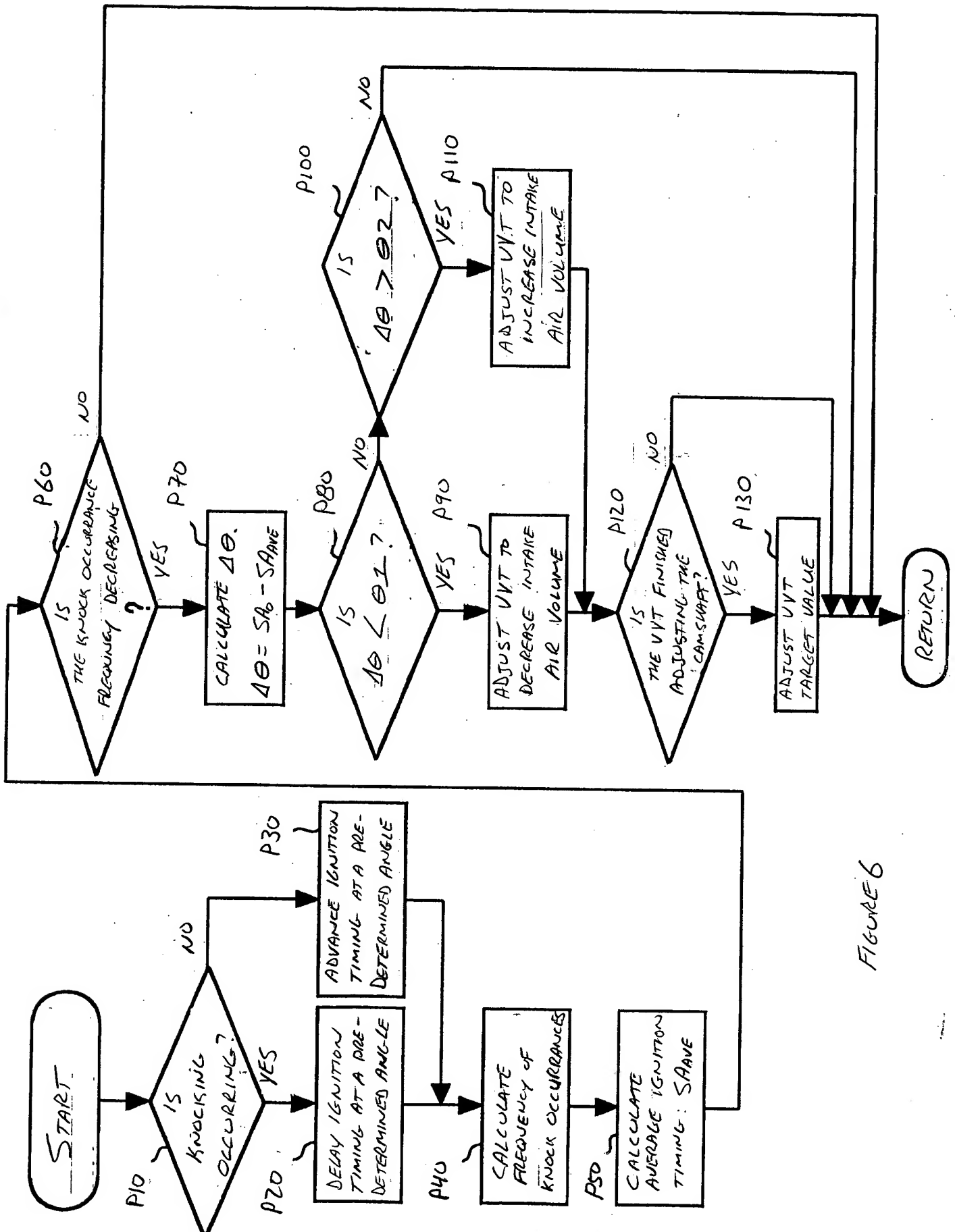


FIGURE 6

# KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown

Atty Docket: FS.20120US0A

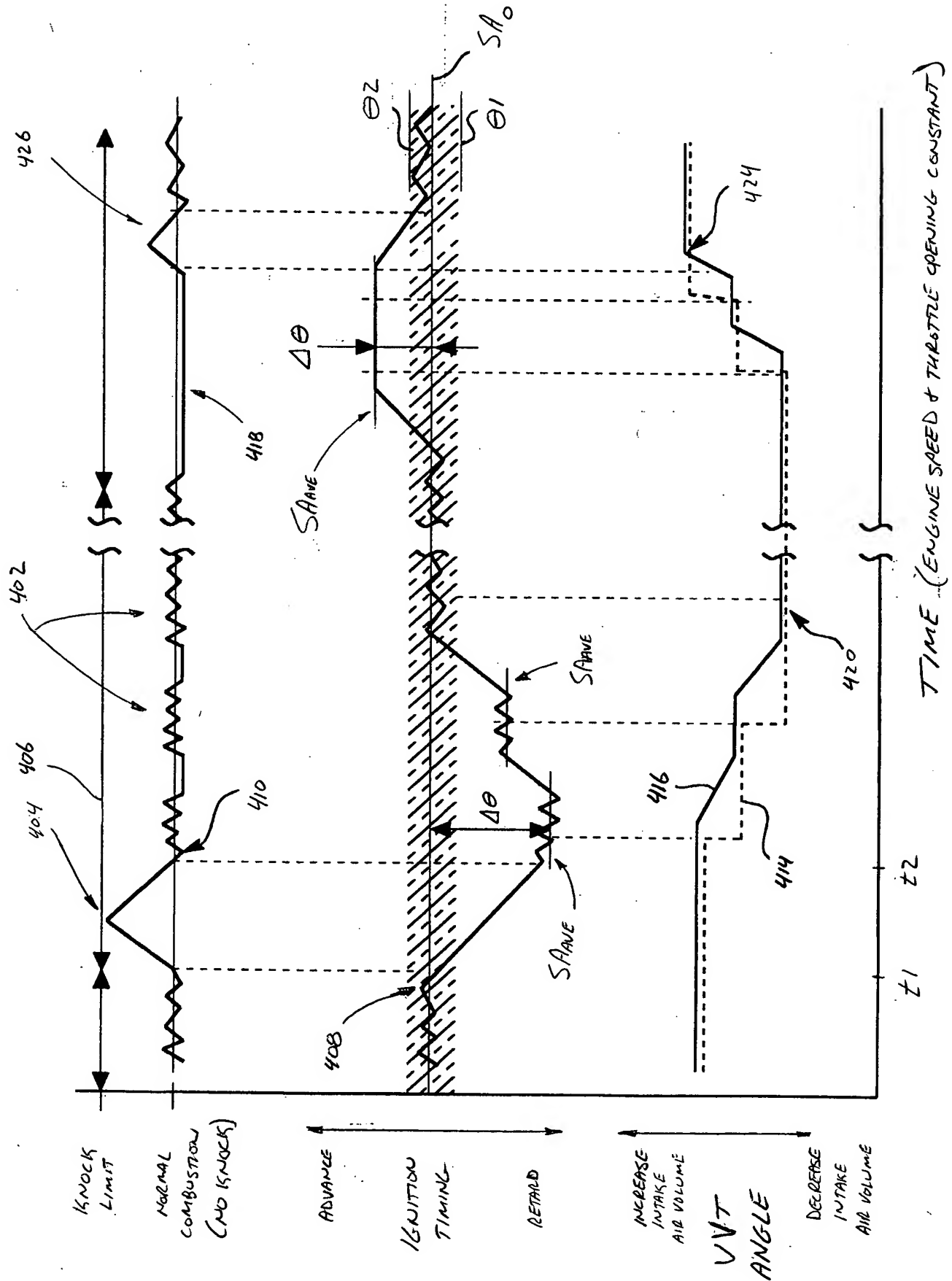


FIGURE 7

ENGINE  
TORQUE

FUEL  
CONSUMPTION = AIR  
INTAKE  
VOLUME

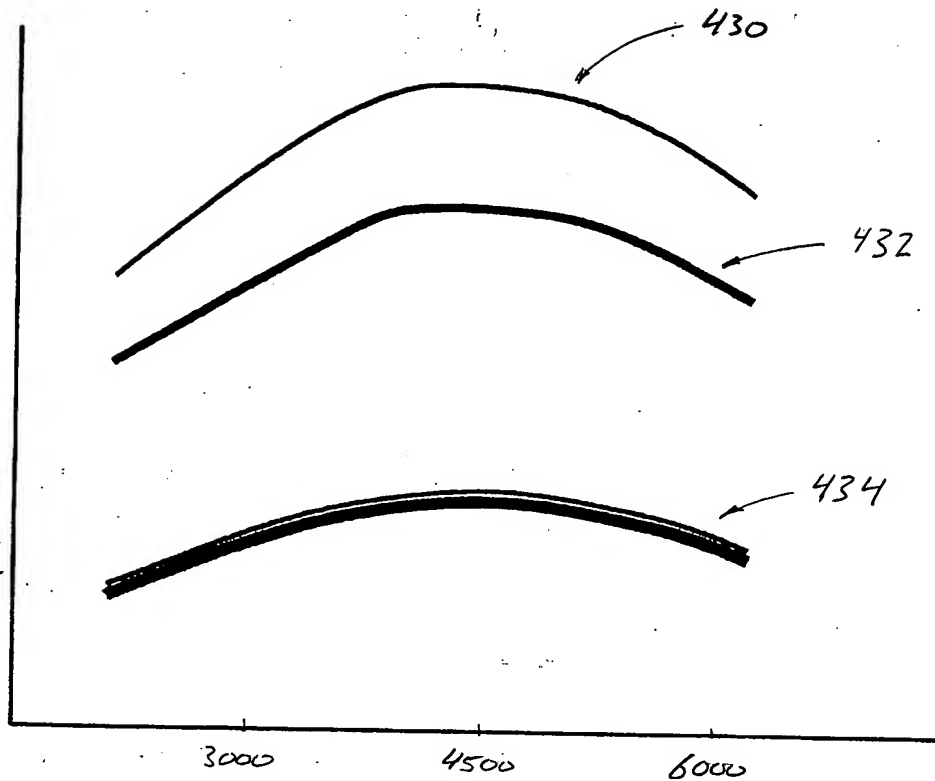


FIGURE 8a

ENGINE SPEED IN RPM

ENGINE  
TORQUE

FUEL  
CONSUMPTION = AIR  
INTAKE  
VOLUME

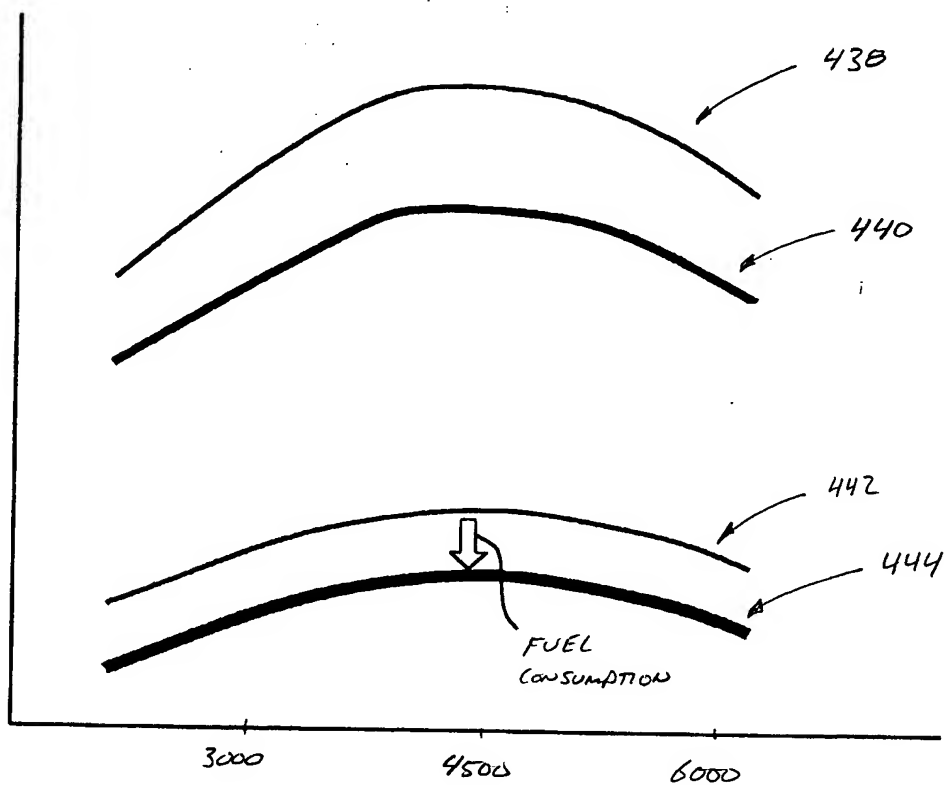


FIGURE 8b

ENGINE SPEED IN RPM



KNOCKING AVOIDANCE CONTROL SYSTEM OF A FOUR-STROKE  
ENGINE FOR AN OUTBOARD MOTOR

Goichi Katayama

Appl. No.: Unknown Atty Docket: FS.20120US0A

— = OPTIMAL OCTANE FUEL  
— = LOW OCTANE FUEL

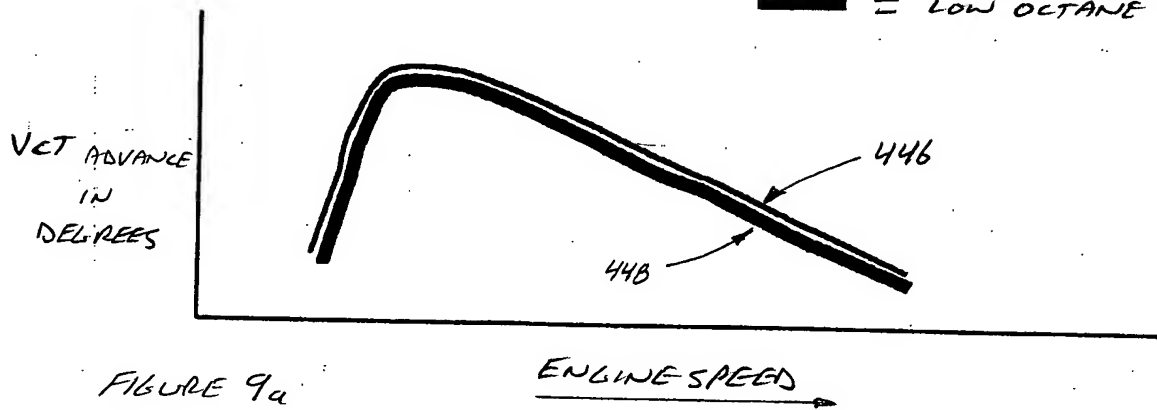


FIGURE 9a

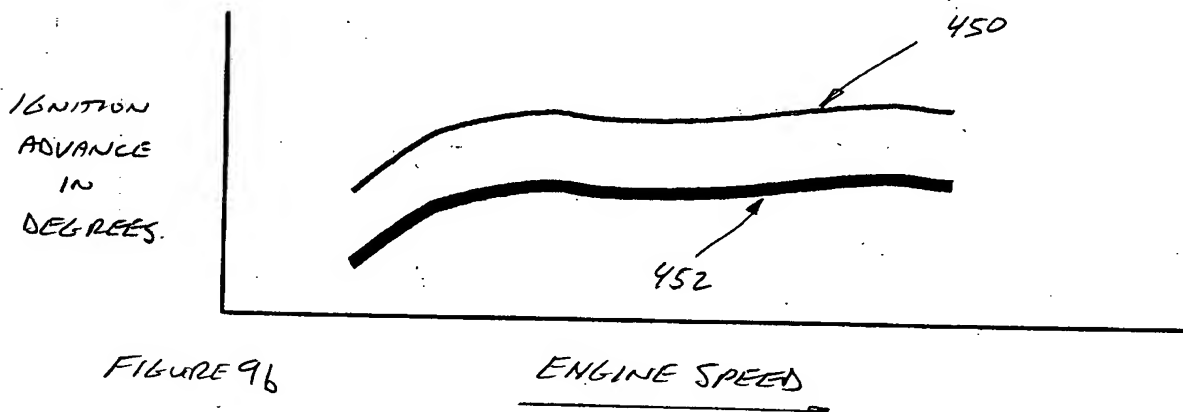


FIGURE 9b

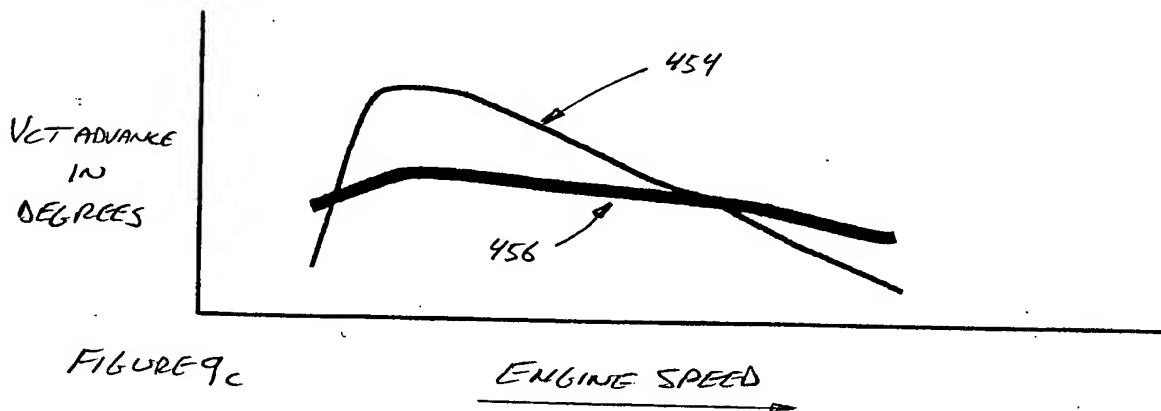


FIGURE 9c

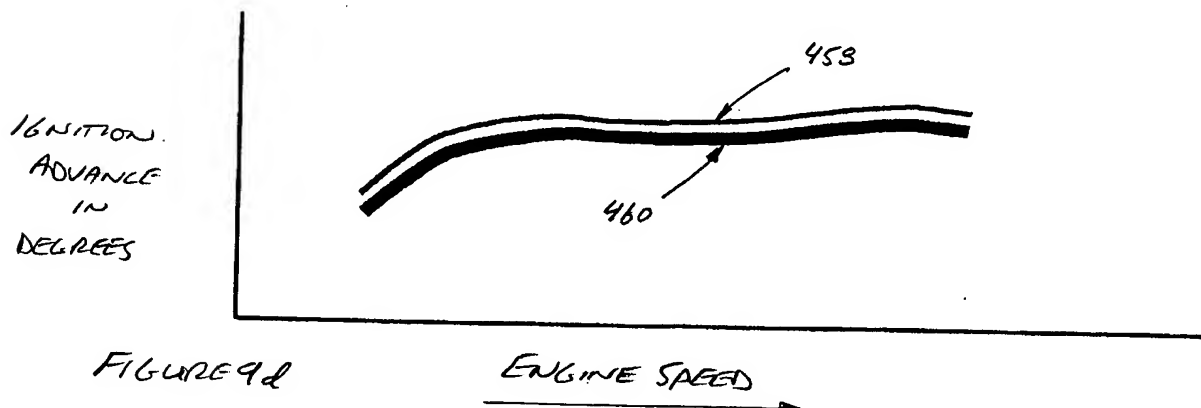


FIGURE 9d